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11 Improved communication using avatars
12
13 This invention relates to the general fields of capturing
14 attribute data of individuals and selecting individuals
15 using captured data, and more specifically to the use of
16 avatars for capturing attribute data and selecting
17 individuals. Aspects of the invention relate to
18 messaging systems and methods utilising avatars to
19 facilitate rich but anonymous interaction.
20
21 In the field of messaging, text is commonly used to
22 identify users of messaging systems in ways that describe
23 their physical, geographical or social attributes. This
24 allows others to select users for the receipt of
25 messages. Such text offers descriptive information but
26 maintains anonymity and privacy. A series of static
27 graphical icons can also convey this information.
28 However, the problem with this approach is that it does
29 not present users with a simple, instant visual
30 description that assists in making a go /no-go decision
31 on whether or not to pursue contact.
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1 If a user wants to show other users what they look like,
2 they can post a photograph. However, a high percentage
3 of Internet dating site users do not and will not post
4 photographs of themselves for reasons of personal
5 privacy; they would inevitably lose some anonymity.

6
7 Posting some other static image depicting some of their
8 physical attributes is an option, for example using a
9 drawing program or scan of a hand drawing. However, this
10 is often not convenient for the user and it does not
11 facilitate automated searching for or organising of the
12 attributes, other than by some complex pattern-
13 recognition software trawling through the images.

14
15 The user is therefore constrained in that they can either
16 keep anonymity but not convey their appearance
17 adequately, or lose anonymity by showing what they look
18 like with a photograph. Furthermore, a problem with
19 static images, including photographs, is that they are
20 not easy to update with real time information about the
21 user.

22
23 At present, Microsoft®'s instant messaging service
24 depicts its Buddy List as a set of monochrome pawns with
25 names below. This pawn representation does provide
26 anonymity if accompanied by a user name that is
27 pseudonymous, and thus would hide the identity of the
28 associated user. However, the viewer still has to rely
29 on the text to identify users, due to the uniformity of
30 the pawn representations.

31
32 Items on the Buddy List also provide status information,
33 for example indicating that another user is on-line, but

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1 fail to convey more detailed information about the user.
2 For example, characteristics such as the users
3 appearance, location, or present activity are not
4 conveyed. Worse still, the rendering of the Buddies on
5 the list is performed without reference to the current
6 status of the attributes of the user being represented.
7 Even if the text is descriptive of such attributes, it is
8 rendered using information that was entered at the time
9 of registration of the users' account.
10
11 It is an object of the present invention to provide
12 convenient capture of individual's attributes.
13
14 It is a further object of the present invention to
15 provide convenient selection of an individual from their
16 attributes.
17
18 It is a further object of the present invention to
19 provide convenient use of individual's attributes for
20 messaging.
21
22 According to a first aspect of the invention, there is
23 provided a method of messaging comprising the steps of:
24 - maintaining a database of records, each record
25 comprising attributes of an individual and an
26 identifier of said individual;
27 - receiving at least one input attribute from a
28 user;
29 - retrieving at least one record from the database
30 in accordance with at least one input attribute;
31 - identifying an individual corresponding to each
32 selected record;

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- 1 - rendering at least one avatar using attributes
- 2 comprised in the at least one selected record;
- 3 - selecting a rendered avatar;
- 4 - sending a message to the identified individual.

5

6 According to a second aspect of the invention, there is
7 provided a method of messaging comprising the steps of:

- 8 - maintaining a database of records, each record
- 9 comprising attributes of an individual and an
- 10 identifier of said individual;
- 11 - receiving at least one input attribute from a
- 12 user;
- 13 - rendering an avatar responsive to the input
- 14 attributes;
- 15 - retrieving at least one record from the database
- 16 in accordance with at least one input attribute;
- 17 - identifying an individual corresponding to each
- 18 retrieved record;
- 19 - sending a message to the identified individual.

20

21 The method may comprise the additional step of rendering
22 at least one avatar using attributes comprised in the
23 selected records.

24

25 The method may comprise the additional step of selecting
26 at least one of the rendered avatars.

27

28 Preferably, the step of selecting at least one of the
29 rendered avatars is in response to a selection input by
30 the user.

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1 The method may comprise the additional step of receiving
2 the message from the user.

3

4 The method may comprise the additional step of verifying
5 that a status of a user is such that the user is not
6 blocked from sending a message to an identified
7 individual.

8

9 The method may comprise the additional step of
10 determining whether a user has been assigned a status of
11 disallowed sender to an identified individual, and
12 preventing the rendering of an avatar corresponding to
13 that identified individual.

14

15 Preferably, the step of determining a status of the user
16 is dependent on the identity of the user and the identity
17 of the individual.

18

19 The status of the individual may be determined using the
20 database.

21

22 The method may comprise the steps of storing an
23 identifier associated with a selected record, and
24 determining the status of the individual using the
25 associated identifier.

26

27 The method may comprise attributes relating to a location
28 of an individual.

29

30 According to a third aspect of the invention, there is
31 provided a system for messaging comprising:

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- 1 - a storage means for storing a plurality of
2 records, each record comprising attributes of an
3 individual and an identifier of said individual;
4 - an avatar rendering and selection means for
5 rendering an avatar using attributes stored in the
6 storage means, and selecting a rendered avatar;
7 and
8 - a messaging means, for identifying an individual
9 corresponding to the selected rendered avatar, and
10 sending a message to the identified individual.

11
12 The system may comprise a display for displaying a
13 rendered avatar to the user.

14
15 Preferably, the avatar rendering and selection means is
16 adapted to receive attributes input by a user for
17 matching and retrieving data in the storage means and
18 render an avatar responsive to said input attributes.

19
20 Preferably, the avatar rendering and selection means is
21 adapted to match input attributes with records in the
22 database and retrieve matched records.

23
24 Optionally, the input attributes relate to the location
25 of an individual.

26
27 Optionally, the input attributes include details of an
28 individual's physical appearance.

29
30 The details of the individual's physical appearance may
31 be selected from a list of head shapes, eye colours,
32 eyelid states, mouth types, hairstyles, hair colours,
33 skin colours, breast size, belly size and clothing.

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2 The clothing may be selected from a list comprising: top
3 style, top colour, bottom style, bottom colour, shoe type
4 and shoe colour.

5

6 The attributes of an individual may include details of
7 the individual's behaviour.

8

9 The details of the individual's behaviour may be selected
10 from a list comprising: smoking preference, drink
11 preference, musical preference, and interests.

12

13 The avatar rendering and selection means may be further
14 adapted to verify that a status of a user is such that
15 the user is not blocked from sending a message to an
16 identified individual.

17

18 The avatar rendering and selection means may be further
19 adapted to determine whether a user has been assigned a
20 status of disallowed sender to an identified individual,
21 and prevent the rendering of an avatar corresponding to
22 that identified individual.

23

24 The avatar rendering and selection means may be further
25 adapted to determine the status of the individual using
26 the database.

27

28 The avatar rendering and selection means may be adapted
29 to store an identifier associated with a selected record,
30 and the status of the individual may be determined using
31 the associated identifier.

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1 Preferably, the inputting of attributes is performed
2 using a graphical user interface that includes an output
3 rendered avatar.

4

5 According to a fourth aspect of the invention, there is
6 provided a method of capturing attributes of individuals
7 comprising the steps of:

- 8 - maintaining a database of records, each record
9 comprising attributes of an individual and an
10 identifier of an individual;
- 11 - receiving at least one input attribute from a
12 user;
- 13 - rendering an avatar, responsive to said input
14 attributes.

15

16 According to a fifth aspect of the invention, there is
17 provided a system for capturing attributes of individuals
18 comprising:

- 19 - a storage means for storing a plurality of
20 records, each record comprising attributes of an
21 individual and an identifier of said individual;
- 22 - a character engine means for receiving input
23 attributes of an individual and rendering an
24 avatar, responsive to said input attributes.

25

26 According to a sixth aspect of the invention, there is
27 provided a method of selecting individuals comprising the
28 steps of:

- 29 - maintaining a database of records, each record
30 comprising attributes of an individual and an
31 identifier of said individual;

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- 1 - receiving at least one input attribute from a
- 2 user;
- 3 - retrieving at least one record from the database
- 4 in accordance with at least one input attribute;
- 5 - rendering at least one avatar using attributes
- 6 comprised in the at least one selected record;
- 7 - selecting a rendered avatar.

8
9 According to a seventh aspect of the invention, there is
10 provided a system of selecting individuals comprising:

- 11 - a storage means for storing a plurality of
- 12 records, each record comprising attributes of an
- 13 individual and an identifier of said individual;
- 14 - an avatar rendering and selection means for
- 15 rendering an avatar using attributes stored in the
- 16 storage means, and selecting a rendered avatar.

17
18 In order to provide a better understanding of the present
19 invention, various embodiments will now be described, by
20 way of example only, and with reference to the
21 accompanying Figures in which:

22
23 Figure 1 illustrates a flow chart of the steps of a
24 method of capturing attributes including rendering
25 an avatar, in accordance with an embodiment of the
26 invention;

27
28 Figure 2 illustrates a flow chart of the steps of a
29 messaging method including the steps of selecting
30 individuals using selection of avatars, in
31 accordance with an embodiment of the present
32 invention;

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2 Figure 3 illustrates a graphical user interface for
3 building an avatar and a selection of avatars
4 rendered to display a range of attributes in
5 accordance with an embodiment of the invention; and

6

7 Figure 4 illustrates the components of a system in
8 accordance with an embodiment of the present
9 invention;

10

11 Figure 5 illustrates a web services model used with
12 an embodiment of the invention.

13

14 The invention is a method and system that functions to
15 capture attributes of individuals through a convenient
16 interface for both the maintenance of a database and
17 selection of records in the database for messaging
18 purposes.

19

20 With reference to Figure 1, a flowchart 10 of an example
21 method of capturing and using attributes of individuals
22 is shown.

23

24 During registration, the system determines 12 the
25 identifier of the individual, e.g. an email address,
26 name, or pseudonym, and stores 14 the identifier in the
27 database 16. The database 16 is maintained to contain
28 attributes and identifiers of individuals.

29

30 The user inputs 18 attributes of an individual using a
31 "character engine" graphical user interface that includes
32 a displayed avatar. During registration, the attributes
33 are personal attributes relating to the user itself,

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1 although they could also relate to another individual.
2 The displayed avatar is rendered 20 responsive to the
3 input attributes. The input attributes are stored 22 in
4 the database 16 along with the identifier. The data
5 including the attributes and the identifier can be termed
6 a record.

7
8 This process allows users to describe themselves by
9 building the avatar. In this embodiment, instead of
10 using a series of drop down menus or text inputs, users
11 build up the image of an avatar by graphically choosing
12 hairstyle, hair colour, face shape, etc.

13
14 With reference to Figure 3, upon registration, a
15 graphical user interface 310 displays a naked avatar 311
16 with a menu 312 for selecting attributes 313. Attribute
17 selection button 314 can be clicked on by the user to
18 change the selected attribute, which also triggers the
19 avatar-rendering module to re-render and output the
20 avatar with the selected attribute depicted. A save
21 button 315 can be clicked by the user to trigger the
22 character engine to store the attribute in the database.
23 Based on the physical appearance users now build up their
24 avatar.

25
26 A selection of such avatar heads 316 is shown. Further
27 physical appearance is differentiated by selecting the
28 colour of clothing and preferred type of drink. Male
29 figures 317 can be described down to belly size
30 reflecting physical build. Female avatars 318 can be
31 enhanced with chest size, makeup, clothing colour and
32 preferred drink. Facial expressions 319 can be created
33 by the use of eyelids.

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2 Attributes of an individual include details of the
3 individual's physical appearance such as their head
4 shape, eye colour, eyelid state, mouth type, hairstyle,
5 hair colour, skin colour, breast size, belly size and
6 their clothing.

7

8 Their clothing is selected from top style, top colour,
9 bottom trousers, bottom colour, shoe type, and shoe
10 colour.

11

12 The attributes may include details of the individual's
13 behaviour such as smoking preference, drink preference,
14 musical preference, interests and clothing preferences.
15 Attributes may also include details of an individual's
16 favourite community such as a sporting or musical
17 community.

18

19 The attributes are stored in the database, starting with
20 a "naked" avatar defined by the following data:

21

22 char_head_shape=oval

23 char_eye_col=blue

24 char_eye_lid=open

25 char_mouth=mouth6

26 char_hair_style=s15

27 char_hair_col=ginger

28 char_fag=no

29 char_specs=none

30 char_facial=none

31 char_makeup=lash

32 char_sex=female

33 char_col=black

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```
1 char_chest=medium
2 char_belly=none
3 char_top=tshirt
4 char_top_col=white
5 char_bot=skirt1
6 char_bot_col=blue
7 char_shoe=shoes
8 char_shoe_col=white
9 char_drink=cock
10
11 This data represents a blank avatar that is displayed at
12 the start of the registration process, or when a user
13 visits the site and is not logged in. Note that although
14 some of the values are actually set at this point, they
15 need not be rendered on the avatar. For example
16 'char_hair_col = ginger' does not appear as ginger hair
17 on the character because 'char_hair_style=s15' is given,
18 which corresponds to the avatar having no hair.
19
20 After inputting or changing the attributes, the final
21 attributes are stored in the database, for example:
22
23 char_head_shape=round
24 char_eye_col=brown
25 char_eye_lid=open
26 char_mouth=mouth1
27 char_hair_style=s13
28 char_hair_col=black
29 char_fag=no
30 char_specs=none
31 char_facial=none
32 char_makeup=lash
33 char_sex=female
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1 char_col=white
2 char_chest=none
3 char_belly=none
4 char_top=sweat
5 char_top_col=yellow
6 char_bot=bare
7 char_bot_col=blue
8 char_shoe=bare
9 char_shoe_col=blue
10 char_drink=none
11

12 The user has thus created a personal avatar, and is able
13 to download either the rendered avatar or the attributes
14 themselves to their computer or mobile telephone for a
15 variety of purposes. These purposes include personalised
16 screen savers, telephone screen logos, email signatures
17 or instant messaging personalities.
18

19 The "character engine" graphical user can be presented
20 via web pages, I-mode, WAP, GPRS, MMS or SMS technologies
21 and protocols using conventional programming techniques.
22 In this embodiment, a Macromedia® Flash front end is used
23 with an asp.net connection module to the database and a
24 Microsoft® SQL Server database engine.
25

26 In certain embodiments, the avatar may be animated (e.g.
27 rendered using an animated GIF) or may perform a number
28 of automated tasks such as speech or making sound. The
29 avatar or database may co-operate with software agents
30 that perform other automated tasks. The avatars may be
31 3D representations, to which a user may associate a
32 variety of animated routines and movements.
33

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1 The avatars or stored attributes can be migrated to
2 personalise web pages or for use in computer games. In
3 addition, they may be used in the automated production of
4 merchandise such as stationery (e.g. business cards),
5 clothing, mouse mats, toys or other goods using the
6 attributes to select various components of the toys or
7 other goods. The stored identifier can be used for
8 addressing delivery of the produced merchandise, etc.
9

10 At a later time, users may update 23, add to or amend
11 their associated attributes, resulting in the rendering
12 of an updated avatar and storing of an updated record.
13 Any associated software modules, such as e-mail programs
14 can remotely access the latest avatar to provide an
15 updated graphical e-mail signature.
16

17 Users may also create avatars representative of friends
18 or contacts, which can be used in directories, contact
19 lists or as caller ids.
20

21 An aspect of the invention relates to a messaging method,
22 including a method of selecting individuals, and is shown
23 in Figure 2 of the drawings, generally depicted at 20.
24

25 Messaging between users is performed by the maintenance
26 of a database 16 of attributes and identifiers of
27 individuals, as described above. In the preferred
28 embodiment, the records in the database are entered in
29 the manner described with reference to Figures 1 and 3.
30

31 A user inputs 24 attributes relating to an individual
32 with which he may wish to communicate. These input
33 attributes are used to render 26 an avatar, which is

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16

1 representative of an individual with which the user may
2 wish to communicate. The attributes are entered by means
3 of a "character engine" graphical user interface as
4 described above with reference to Figures 1 and 3. The
5 input attributes may be desired physical or social
6 characteristics, or may relate to a geographical location
7 of an individual to be communicated with, or a
8 combination of all three.

9

10 The input attributes used for selecting records from the
11 database may be attributes relating to the location of
12 the user himself. For example, if the user inputs his
13 geographical location, such as the name of a social venue
14 or bar, via his mobile phone, the system subsequently
15 selects and retrieves records 28 from the database that
16 match only that location.

17

18 Subsequently, records from the database providing a match
19 with the input attributes are selected and retrieved 28
20 from the database, and avatars are rendered 30 according
21 to the stored attributes. The rendered avatars are
22 displayed 36 on the user's display.

23

24 There may be one avatar rendered, or many, depending on
25 the manner in which the records are selected from the
26 database 16 by a matching and retrieval process. The
27 selection process involves a trawl through the database
28 records, and those records having the most attributes
29 matching the input attributes are selected and avatars
30 are rendered. Typically, the eight best-matched avatars
31 are rendered, in order of suitability.

32

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17

1 The embodiment of Figure 2 includes an optional status
2 checking step 32. An individual with a record stored on
3 the database is able to assign a status to other users,
4 from a set of possible statuses. These possible statuses
5 include recipient, disallowed sender, and allowed sender.
6 "Recipient" status is for users previously communicated
7 with, or users with which the individual would wish to
8 communicate. "Disallowed sender" is a status assigned to
9 users from which the individual does not wish to receive
10 messages. "Allowed sender" is the default status for
11 users that may send messages to an individual. The
12 statuses are user-specific, in that a status is assigned
13 to a particular user (an assignee) by a particular
14 individual (the assignor), and does not effect the
15 assignees ability to communicate with individuals other
16 than the assignor.

17
18 The status checking step 32 verifies the status assigned
19 to the user by the individuals corresponding to the
20 selected records. If any of the individuals have
21 assigned a disallowed sender status to the user, an
22 avatar will not be rendered responsive to their
23 attributes, and thus will not be presented to the user
24 for selection in subsequent steps. The user and the
25 individuals, and their statuses, could be identified from
26 the database, as shown by the dotted lines. Identity and
27 status information may be accessed from a database (not
28 shown) other than the database 16.

29
30 It should be noted that the identification of the user
31 and the individuals, and their statuses could be carried
32 out after the matching and retrieval process, or the
33 matching process itself could ensure that the

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1 identification and status requirements are met before
2 retrieval of the records.

3

4 The user then makes a selection 38 of the rendered
5 avatars by clicking on the rendered avatar or an
6 associated graphical display. The user enters a message
7 which is forwarded to the individual who corresponds to
8 the identifier of the selected avatar. The identity
9 address of the individual may be obtained from the
10 database 16, or another database (not shown), as depicted
11 by the arrows 42.

12

13 As an alternative to the arrows 42 accessing identifier
14 information from the database, all relevant identifiers,
15 including status information can be retrieved during the
16 retrieval 28 of the records. The identifiers can be
17 stored 44, for example, as a link or embedded identifiers
18 associated with the record or the rendered avatar.

19

20 The above-described method allows anonymous messaging
21 between users, whilst allowing a user to select a
22 recipient from a number of possible recipients based on a
23 visual impression obtained from the graphically created
24 avatars and other selection criteria.

25

26 The above description relates to a messaging method,
27 although it will be appreciated that steps of the method
28 could be used simply as a convenient method of selecting
29 one or more individuals by:

30 maintaining a database 16 of attributes and identifiers
31 of individuals;

32 retrieving 28 records from the database using input
33 attributes;

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1 rendering 34 and displaying 36 an avatar using attributes
2 stored in the selected records; and
3 selecting 38 a rendered avatar.

4

5 It will also be apparent that although the above
6 described messaging method renders avatars at two
7 distinct steps (the input stage and the user selection
8 stage), there may be embodiments in which avatars are
9 rendered at only one of the steps.

10

11 For example, a user may have pre-input a series of
12 desired attributes, for which an avatar was rendered and
13 stored. At a later time, for example when the user is
14 present in a geographical location such as a bar or club,
15 the user inputs the name of that location. The system
16 conducts a search based on the pre-input attributes and
17 the updated location, to provide a selection of avatars
18 to the user that correspond to individuals that have
19 indicated that they are present at that location. The
20 user has thus obtained a short list of possible
21 recipients that are in his immediate vicinity.

22

23 Alternatively, the messaging method may only render an
24 avatar at the step of capturing the attributes, with the
25 subsequent selection of the recipient being automated 46
26 by the system based on the input attributes and stored
27 records.

28

29 An alternative use of the system is in providing an
30 individual with a list of users whose desired attributes
31 match his own personal avatar. In this example,
32 previously stored attributes desired by an individual are
33 used to carry out the matching and retrieval process

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1 described above. One or more individuals corresponding
2 to records retrieved by the search are notified that they
3 have been located, and an avatar corresponding to the
4 user carrying out the search is displayed. The
5 individual is then able to communicate with the user.

6

7 With reference to Figure 4, an example system for
8 capturing attributes of individuals, selecting
9 individuals, and messaging is shown.

10

11 The system includes a database 50 of records, including
12 attributes and identifiers of individuals implemented in
13 Microsoft® SQL Server. A registration module 52 with its
14 input 54 and display 56 is also provided. The
15 registration module 52 also includes a module 58 for
16 determining the identifier of the individual, and a
17 module 60 implemented in asp.net for storing the
18 identifier in the database 50.

19

20 The system further comprises a character engine 62 for
21 inputting attributes, implemented using Macromedia® Flash
22 with an input 64 and a display 66. The character engine
23 also includes a selection module 68 for inputting or
24 selecting attributes of an individual, and a rendering
25 module 70 for rendering an avatar, in response to the
26 input/selected attributes.

27

28 The character engine has a database access module 72 that
29 stores the input attributes in the database 50.

30

31 The character engine 62 may be used to input attributes
32 for selecting data from the storage means.

33

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1 The system for messaging accesses the storage means 50
2 for storing the attributes and identifiers of
3 individuals. The system includes an avatar rendering and
4 selection engine 74 with an input 76, a display 78, and a
5 module 80 for rendering an avatar using attributes stored
6 in the storage means. The system also includes a module
7 82 for selecting a rendered avatar, and a database access
8 module 84. The avatar rendering and selection engine 74
9 also includes identifier retrieval and status checking
10 modules 77, 79 respectively, for determining whether or
11 not a user has been specified as a blocked sender by the
12 identified individuals.

13

14 The system includes a messaging engine 86 with an
15 optional module 88 for identifying a recipient, allowed
16 sender, or disallowed sender corresponding to the
17 selected rendered avatar, and a module 92 for sending to,
18 forwarding from, or blocking from the identified
19 recipient or allowed sender or disallowed sender.

20

21 The messages are routed via a messaging network 94.

22

23 Figure 5 shows a possible implementation in which the
24 methods and systems of the present invention could be
25 incorporated.

26

27 With reference to Figure 5, the Web services link 410
28 allows third-party services 412 to access and retrieve
29 locally created avatars and/or attributes from the
30 database 414 which are created and maintained by systems
31 413 and methods in accordance with the present invention
32 by users at terminals 415. The third party can access
33 and retrieve based on a unique identifier such as e-mail

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22

1 address or phone number. This allows the third party to
2 incorporate the personalised avatar and/or attributes
3 into their service or database 416 for the benefit of
4 their users on terminals 417. For example, this service
5 could be a messaging service such as Hotmail®, MSN
6 Instant Messenger®, or an ISP wishing to personalise
7 their pages.

8
9 Via a Web Service is just one possible method of
10 providing the avatars. The avatars may also be provided
11 through agreement & database sharing, for example through
12 a telecom interface 418.

13
14 Although the embodiments of the invention described with
15 reference to the drawings comprise computer apparatus and
16 processes performed in computer apparatus, the invention
17 also extends to computer programs, particularly computer
18 programs on or in a carrier, adapted for putting the
19 invention into practice.

20
21 The program may be in the form of source code, object
22 code, a code of intermediate source and object code such
23 as a code in partially compiled form suitable for use in
24 the implementation of the processes according to the
25 invention.

26
27 The carrier may be any entity or device capable of
28 carrying the program. For example, the carrier may
29 comprise a storage medium such as ROM, for example a CD-
30 ROM or a semiconductor ROM, or a magnetic recording
31 medium, for example, a floppy disc or hard disc.
32 Furthermore, the carrier may be a transmissible carrier
33 such as an electrical or optical signal which may be

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23

1 conveyed via electrical or optical cable or by radio or
2 other means.

3

4 When the program is embodied in a signal which may be
5 conveyed directly by a cable or other device or means,
6 the carrier may be constituted by such cable or other
7 device or means.

8

9 Alternatively, the carrier may be an integrated circuit
10 in which the program is embedded, the integrated circuit
11 being adapted for performing, or for use in the
12 performance of, the relevant processes.

13

14 Further modifications and improvements may be added
15 without departing from the scope of the invention herein
16 described.

17